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NOTES ON GEOGRAPHIC DISTRIBUTION

Distribution extension of Solifugids (Arachnida: Solifugae) to Atlantic Forest of Brazil

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ABSTRACT: Solifugids have previously been recorded in three Brazilian biomes. The present work extends the records for this order to the Atlantic Forest biome, specifically in restinga (sandy coastal plains) ecosystems. The specimen was identified as *Mummucia* aff. *mauryi* Xavier & Rocha, 2001.

Solifugids (Arachnida: Solifugae) comprise the seventh richest order among the arachnids, and are thus considered a mesodiverse group (Harvey 2002). These animals are distributed throughout the tropics and subtropics, principally in desert or other hot environments (Dunlop and Klann 2009). This group is little-known in South America, with only eight species described for Brazil (see Rocha and Carvalho 2006; Carvalho *et al*. 2010), distributed in the Amazon, Caatinga (dryland), and Cerrado (Brazilian savanna) biomes. There have been no reports of solifugids from other Brazilian biomes (Carvalho *et al*. 2010).

The Atlantic Forest is one of 34 recognized global biodiversity hotspots and is considered one of the top four in terms of conservation priority (Myers *et al*. 2000; Conservation International 2011). It is probably the most devastated and seriously threatened biome on the planet, with 70% of the Brazilian population (including the largest cities and industrial centers) living in the region formerly dominated by this forest (IBGE 2011).

Restinga ecosystems make up part of the Atlantic Forest biome, and they have likewise experienced extreme anthropogenic pressure, which has highly modified their natural landscapes (Ab'Saber 2003; Rocha *et al*. 2004). Located on coastal plains, restingas are characterized as habitats of elevated small-scale spatial heterogeneity (Assis *et al*. 2011; Magnago *et al*. 2011). These areas have sandy soils (Lima *et al*. 2011) with high salinity, and the vegetation cover is highly influenced by edaphic characteristics (Assis *et al*. 2011; Magnago *et al*. 2010). The vegetation cover is open and dominated by shrubs and herbaceous plants presenting xerophytic adaptations (Assis *et al*. 2011; Lima *et al*. 2011), with the presence of associated forest elements (Magnago *et al*. 2011).

The present work reports the first record of the order Solifugae for the Atlantic Forest, in a restinga ecosystem. This species was first captured in October/2010, in the Litoral Norte Environmental Protection Area, a locality within the district of Jandaíra in Bahia State, Brazil (11°41′45″ S, 37°30′28″ W). Twenty-five pitfall traps were installed in each of the four phytophysiognomies of the local restinga (beach front, shrub area, humid zone, and forest) during four consecutive days, totaling 96 hours of collection efforts. Samples were collected in accordance with the authorization of collection number 23111-1 MMA / SISBIO.

Only a single individual of the order Solifugae was collected in a pitfall trap located in the transition zone between the restinga shrub and tree zone – an environment with mainly forest characteristics. The specimen was sent to the Butantan Institute in São Paulo for identification and subsequent incorporation into its permanent Arachnological collection (IBSP, curator: I. Knysak). The specimen was identified by Lincoln Suesdek Rocha as *Mummucia* aff. *mauryi* Xavier & Rocha, 2001 (Figure 1).

In spite of the fact that solifugids are usually found in arid habitats (Dunlop and Klann 2009), this specimen was encountered in a shrub to tree restinga transition zone. The sandy soil is characteristic of the restinga ecosystem (Lima *et al*. 2011), and it is apparently the required kind of soil for *Mummuciidae* Roewer 1934 species (see Xavier and Rocha 2001; Rocha and Cancello 2002; Martins *et al* 2004; Rocha and Carvalho 2006). One solifugid species of genus *Mummucia* Simon 1879, *Mummucia Ibirapemussu* Carvalho, Candiani, Bonaldo, Suesdek & Silva, 2010, was only recorded from arboreal Caatinga and shrubland Caatinga environments (Carvalho *et al*. 2010). Another species, *Mummucia mauryi* Xavier & Rocha, 2001, recorded only during dry periods, is known to prefer localities less exposed to direct sunlight, which could be associated with predator evasion and/or the avoidance of extreme environmental conditions (Xavier and Rocha 2001). The collection of the single specimen of *M. aff. mauryi* may be attributed to its behavior and habitat preference, as it was captured during the dry season and in a transition area environment in the restinga region of Bahia State.

Figure 1. Photo of *Mummucia* aff. *mauryi.*

In Northeast Brazil there are records for three solifugids species from Maranhão, Piauí and Bahia states (Carvalho *et al*. 2010). These three species were captured in Caatinga and Cerrado biome (Xavier and Rocha 2001; Carvalho *et al*. 2010). In Bahia state, there is only one species record of *M. mauryi*, which was originally described for the caatinga dryland biome (Xavier and Rocha 2001). A series of factors may have been determinant to the occurrence of the present species in the restinga: 1) it possesses environmental and vegetation characteristics similar to Caatinga and Cerrado biomes (Marques *et al* 2011), 2) it is largely influenced by these adjacent biomes (Rocha *et al*. 2004), and 3) there is an isolated area of Caatinga vegetation in the proximity of the collection station (SEMA 2011).

This collection increases the known distribution of Solifugae to the Atlantic Forest, a biome that has suffered enormous anthropogenic pressure due to poorly controlled tourism activities and land-use and real estate speculation. This record of *M.* aff. *mauryi* will aid in conservation efforts directed toward this area of elevated biological importance and exemplifies the importance of small-scale studies of the faunal composition of natural areas.

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